

IN THE CLAIMS:

This listing of claims is provided only for the convenience of the Examiner. No claims have been amended, canceled or added in this response.

1-9. (Canceled).

10. (Currently amended) An apparatus comprising:

a storage server, coupled to a network, having a mass storage device;

a multi-appliance management application (MMA) coupled to the network to manage the storage server; and

a server computer including an agent coupled to the storage server and the MMA via the network, the agent to scan a file and directory structure of the storage server to collect information about a file stored on the storage server, and to combine information collected into a summary of a directory in which the file is located, the summary being accessible to the MMA, wherein the ~~agent~~server computer, the MMA, and the storage server are separate devices, and wherein the agent uses a file system different from ~~any~~a file system that the storage server uses.

11-13. (Canceled)

14. (Previously presented) The apparatus of claim 10, further comprising a graphical user interface (GUI) coupled to the MMA.

15-30. (Canceled)

31. (Previously presented) The apparatus of claim 14, further comprising a database coupled to the MMA, the database to store the summary.

32. (Currently amended) The apparatus of claim 31, wherein the summary ~~can be retrieved~~ is retrievable via the GUI.

33. (Currently amended) The apparatus of claim 10, wherein the agent uses [[a]] Common Internet File System (CIFS) or [[a]] Network File System (NFS).

34. (Currently amended) A method comprising:

- causing an agent device to scan a file and directory structure of a storage server to collect information about files maintained by the storage server;
- combining, by the agent device, information collected into a summary of a directory under which the files are stored; and
- sending the summary from the agent device to a multi-appliance management application (MMA), wherein the agent device, the MMA, and the storage server are separate devices, and wherein the agent device uses a file system different from ~~any a~~ a file system that the storage server uses.

35. (Previously presented) The method of claim 34, wherein the MMA sends the summary to a database server, which stores the summary as a table or a histogram.

36. (Currently amended) The method of claim 34, wherein the agent device uses [[a]] Common Internet File System (CIFS) or [[a]] Network File System (NFS).

37. (New) The apparatus of claim 10, wherein the agent comprises a directory thread to scan the directory and a separate file thread to scan the file.

38. (New) The apparatus of claim 10, wherein the summary is in the form of a histogram.

39. (New) The apparatus of claim 10, wherein the summary of the directory comprises an indication of per-user total storage usage for the directory.

40. (New) The apparatus of claim 10, wherein the summary of the directory comprises an indication of average last access time, for a plurality of child nodes in the directory.

41. (New) The apparatus of claim 10, wherein said agent is a first agent of a plurality of independently operable agents, the first agent configured to scan and summarize a first subset of a plurality of directories in the storage server;

the apparatus further comprising a second agent of the plurality of independently operable agents, to scan and summarize a second subset of the plurality of directories in the storage server, wherein the second agent operates independently of the first agent, the storage server and the management application.

42. (New) A method comprising the steps of:

a) using a directory thread in an agent on a network to scan a directory in a storage server on the network to identify contents of the directory, the agent being implemented in a server computer, separate from the storage server, on the network;

b) determining, by the agent, a number of child nodes in the directory in the storage server and incrementing a reference count by the number;

c) scanning, by the agent, a child node in the directory in the storage server to collect information about the child node, wherein said scanning includes using a file thread in the agent to scan and determine characteristics of a file in the directory;

d) combining, by the agent, the collected information about the child node into a summary of the directory, the summary including a histogram;

e) decrementing the reference count after scanning the child node;

f) repeating said steps c) through e) for each of one or more additional child nodes in the directory until the reference count equals a predetermined value, wherein said combining occurs concurrently with said scanning, for different items of information; and

g) storing, by the agent, the summary of the directory in a storage facility accessible to a multi-appliance management application (MMA) configured to manage the storage server, wherein the agent operates independently of the storage server and the MMA.

43. (New) The method of claim 42, wherein the summary of the directory comprises an indication of per-user total storage usage for the directory.

44. (New) The method of claim 42, wherein the summary of the directory comprises an indication of average last access time, for a plurality of child nodes in the directory.

45. (New) The method of claim 42, wherein said agent is a first agent of a plurality of agents on the network, the method further comprising:

using the first agent to scan and summarize a first subset of a plurality of directories in the storage server; and

using a second agent of the plurality of agents on the network, to scan and summarize a second subset of a plurality of directories in the storage server, wherein the second agent operates independently of the first agent, the storage server and the MMA.

46. (New) The method of claim 42, wherein the agent uses a file system different from a file system that the storage server uses.

47. (New) A computer system comprising:

a processor;

a communicate interface, coupled to the processor, through which to communicate with a storage server on a network; and

an agent which configures the processor to execute a process that includes a set of steps, including

scanning a directory in the storage server to identify child nodes in the directory;

scanning each of the child nodes in the directory in the storage server to collect information about the child nodes;

combining the collected information about the child nodes into a summary of the directory, wherein said combining occurs concurrently with said scanning, for different items of information; and

storing the summary of the directory in a storage facility accessible to a storage management application configured to manage the storage server, wherein the agent is operable independently of the storage server and the storage management application.

48. (New) The computer system of claim 47, wherein the summary of the directory is in the form of a histogram.

49. (New) The computer system of claim 47, wherein the summary of the directory comprises an indication of per-user total storage usage for the directory.

50. (New) The computer system of claim 47, wherein the summary of the directory comprises an indication of average last access time, for a plurality of child nodes in the directory.

51. (New) The computer system of claim 47, wherein said agent is a first agent of a plurality of agents on the network, the first agent configuring the processor to scan and

summarize a first subset of a plurality at directories in the storage server, where a second agent of the plurality of agents is configured to scan and summarize a second subset of a plurality at directories in the storage server.

52. (New) The computer system of claim 47, wherein the agent uses a file system different from a file system that the storage server uses.

53. (New) The computer system of claim 47, wherein the agent comprises:
a directory thread to scan a directory in a storage server on the network to identify contents of the directory; and
a file thread to scan and determine characteristics of a file in the directory.